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**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*).
2. Texts in the figures are not translated and shown as it is.

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The following component (a) - (d) Bleaching detergent composition for the hard surfaces to contain.

(a) Peroxide (b) which generates hydrogen peroxide in hydrogen peroxide or an aqueous solution Succinic anhydride, One sort or two sorts or more (c) which were chosen from the group which consists of a copolymer which has acid anhydride structure in a frame with alkyl or alkenyl succinic acid anhydride, a maleic anhydride polymer, and the copolymer of maleic anhydride, a copolymerizable monomer, and maleic anhydride Surface active agent (d) High DOROTO rope agent

[Claim 2] Peroxide which generates hydrogen peroxide in an aqueous solution (a) Sodium carbonate and a hydrogen peroxide addition product, The bleaching detergent composition for the hard surfaces according to claim 1 which is one sort chosen from the group which consists of  $4\text{Na}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}_2$  and a NaCl double salt, sodium perborate 1 hydrate, and sodium perborate 4 hydrate, or two sorts or more.

[Claim 3] A high DOROTO rope agent Diols, alkenyl succinic acid, or its alkali metal salt, The bleaching detergent composition for the hard surfaces according to claim 1 or 2 which is one sort chosen from the group which consists of toluenesulfonic acid or its alkali metal salt, xylene sulfonic acid or its alkali metal salt, and urea, or two sorts or more.

[Claim 4] the following (a) - (e) from -- becoming bleaching detergent composition for the spray type hard surfaces.

(a) Peroxide which generates hydrogen peroxide in hydrogen peroxide or an aqueous solution 1 to 35 weight % (b) Succinic anhydride, Alkyl or alkenyl succinic acid anhydride, maleic anhydride pile Copolymerization of coalescence and maleic anhydride, a copolymerizable monomer, and maleic anhydride one sort chosen from the group which consists of a copolymer which has acid anhydride structure in a frame with the body -- or -- Two or more sorts of 1 to 35 weight % (c) 0.1 to 10 weight % of surface active agents (d) High DOROTO rope agent 0.5-30 weight % (e) Water 50 to 90 weight %

**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

[Industrial Application] This invention is safe, does not have an irritating odor, and relates to the bleaching detergent composition for the hard surfaces which was moreover excellent in bleaching power.

**[0002]**

[Description of the Prior Art] If the pigment which mold, such as a Cladosporium group, produces is the cause and darkening soils, such as a wall of the ceiling of a bathroom, a tile joint, and plastics and a sink-corner strainer of a kitchen, carry out prolonged continuous use of the flush toilet bowl, Although deposition of the soil colored the inside, standing water side, especially water seal part of

the toilet bowl arises, this soil is mainly organic excrement, such as inorganic substances, such as calcium phosphate and iron oxide, and crude protein, a bile decomposition product, a microorganism, or its metabolite. Since it is difficult to drop the soil for these hard surfaces only to a cleanser or a surface active agent, the bleaching agent composition of the shape of a spray which uses chlorine bleaches, such as hypochlorite, is used now.

[0003] However, the bleaching agent for the hard surfaces which uses hypochlorite has the large danger for eyes or the skin, although the performance is excellent, and especially the spray-like thing is unsuitable for mold, such as a ceiling. Furthermore, the smell of a characteristic chlorine system is strong, and when using it in a narrow bathroom etc. has resistance, and it uses together with an acid detergent accidentally, there is a problem of generating poisonous gas.

[0004] The bleaching agent for the hard surfaces which uses the oxygen system bleaching agent which does not have such danger in recent years is examined. For example, the constituent which used together hydrogen peroxide or fault sodium carbonate, a bleaching activator, and peroxy disulfate is indicated by JP,S62-4794,A. Especially as a bleaching activator, tetra-acetyl diamine, tetraacetylglycoluril, pentaerythritol tetra-acetate, etc. are excellent. However, since these bleaching activators generate peracetic acid as bleaching active species, an irritating odor is strongly difficult for utilization.

[0005] Moreover, they are bleaching active species other than peracetic acid from the former. Various combination constituents by the combination of the bleaching activator to generate and the inorganic peroxide represented by fault sodium carbonate, sodium perborate, etc. are also indicated, for example, on U.S. Pat. No. 2362401 Descriptions Sodium perborate, The combination constituent by any one combination of the solid organic acid anhydrides, such as succinic anhydride, phthalic anhydride, a benzoic anhydride, maleic anhydride, and anhydrous glutaric acid, is indicated. Moreover, with the British patent No. 907358 Description, many organic acid anhydrides are a bleaching activator. \*\* -- although the unsuitable thing was pointed out By blending by moles [ succinic anhydride / phthalic anhydride, ] on U.S. Pat. No. 3338839 Descriptions, it supposes that the fault was conquered and is the British patent 2193510th further. On number Descriptions, sodium perborate, It is indicated by combining phthalic anhydride, maleic anhydride, or succinic anhydride by a specific ratio as a bleaching activator that bleaching performance improves.

[0006] It is desirable on performance to be applied to a bleaching washing side by the foamy spray using the spray container as the actual type of usage of the bleaching detergent composition for the hard surfaces on safe. However, since the conventional bleaching detergent composition for the hard surfaces is not taken into consideration to the situation in an actual use scene, application to the bleaching washing side by a foamy spray is not realized.

[0007]

[Means for Solving the Problem] Conditions, like that there are not that bleaching power is high, that bleaching power continues about 30 minutes at least, an offensive odor, and an irritating odor as bleaching active species in the bleaching detergent composition for the hard surfaces which uses an oxygen system bleaching agent, and it can inject foamy with a spray container are required. This invention persons completed this invention wholeheartedly about the combination presentation of the bleaching active species which fulfills these conditions as a result of research.

[0008] That is, this invention is the following component. (a) - (d) The bleaching detergent composition for the hard surfaces to contain is offered.

(a) Peroxide (b) which generates hydrogen peroxide in hydrogen peroxide or an aqueous solution Succinic anhydride, One sort or two sorts or more (c) which were chosen from the group which consists of a copolymer which has acid anhydride structure in a frame with alkyl or alkenyl succinic acid anhydride, a maleic anhydride polymer, and the copolymer of maleic anhydride, a copolymerizable monomer, and maleic anhydride Surface active agent (d) High DOROTO rope agent.

[0009] Component used as the bleaching base of the bleaching detergent composition for the hard

surfaces of this invention (a) as peroxide which generates hydrogen peroxide in an aqueous solution Fault sodium carbonate, sodium tripolyphosphate, and a hydrogen peroxide addition product, Sodium pyrophosphate and a hydrogen peroxide addition product, urea and a hydrogen peroxide addition product or  $4\text{Na}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}_2$  and a NaCl double salt, sodium perborate monohydrate, sodium perborate 4 hydrate, fault sodium silicate, sodium peroxide, calcium peroxide, etc. are illustrated. Also especially in this, sodium carbonate and a hydrogen peroxide addition product,  $4\text{Na}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}_2$  and a NaCl double salt, sodium perborate monohydrate, and sodium perborate 4 hydrate are desirable. (a) At the time of bleaching washing (at the time of use), one to 35weight %, preferably, a component is adjusted so that it may become 2 to 15weight % of concentration, and it is blended with a constituent. The concentration of an effect at the time of use is dissatisfied at less than 1 weight %, and if 35 weight % is exceeded, problems, like solubility worsens will arise.

[0010] (b) used for this invention A component is a bleaching activator and Succinic anhydride, One sort chosen from the group which consists of a copolymer which has acid anhydride structure, or two sorts or more are used into a frame with alkyl or alkenyl succinic acid anhydride, a maleic anhydride polymer, and the copolymer of maleic anhydride, a copolymerizable monomer, and maleic anhydride. (b) in a constituent The loadings of a component are 2 to 15 weight % preferably one to 35weight %. As maleic anhydride and a copolymerizable monomer, ethylene, propylene, butylene, isobutylene, diisobutylene, pentene, styrene, methyl vinyl ether, acrylic acid, methacrylic acid, etc. are mentioned. a maleic anhydride polymer or a copolymer -- average molecular weight 500-200,000 -- desirable -- 1000-100,000 -- the thing of 2000-20,000 is used especially preferably. Such (b) In order to improve caking-proof nature and the storage stability under bleaching base coexistence, as for a component, it is desirable to use it as agglomerated material using polyethylene glycol, polyoxyethylene alkyl ether, or carboxymethylcellulose whose fusing point is 40-80 degrees C as a binder. It is polyoxyethylene (par addition number of moles 5-100) alkyl especially. (C8-C22) The agglomerated material of solubility which uses ether as a binder is well desirable. (b) The granulation of a component is (b). 2-15 copies of components are performed in 40 - 98 weight part and a binder by supplying other granulation assistants etc. to churning tumbling granulator or a pellet mill if needed further. grain size of agglomerated material 125micro - 3mm -- desirable -- 350micro - 1.5mm It is good to adjust so that grains may become 90% or more. Moreover, (b) A component is (a) after performing granulation. In order to prevent reacting during peroxide like a component, the moisture in alkali chemicals and the air, etc. and storage, it is desirable that coating treatment is carried out. Generally as a coating agent, fatty acid, polyethylene glycol, Cellulose system polymer, such as hydroxypropyl methylcellulose and hydroxyethyl cellulose, Polyvinyl alcohol, a shellac, carboxylic acid system polymer, a starch, Although metal oxides, such as calcium salt, such as dextrin, gelatin, water-soluble rubber, gum arabic, Tragacanth gum, and calcium carbonate, titanium oxide, zeolite, silica, and alumina, clay in particular, etc. are not limited but it can be used Cellulose system polymer, such as hydroxypropyl methylcellulose, can especially use conveniently. The amount of the coating agent used is (b) after granulation. It is compatible in solubility, and preservation stability and caking nature to be used for a component in 0.01 to 5weight % of the range, and it is desirable. In addition, in order to raise solubility further, the foaming agent by the combination of ordinary temperature solid acid, such as disintegrator, sodium hydrogencarbonate and tartaric acid like carboxymethylcellulose, and succinic acid, etc. can also be blended into agglomerated material.

[0011] In this invention, it is (a). A component and (b) [ a component ] With a molar ratio (a) / (b) = 1 / 1 - 1/0.1 It is (b), when being provided in the range is desirable and a molar ratio becomes less than 1/1. The portion which a component does not commit effectively as a bleaching activator arises, it is uneconomical, and bleaching ability will become inadequate if it exceeds 1/0.1.

[0012] (c) used for this invention Since the surface active agent of a component can promote osmosis in the soil of bleaching active species 0.1 to 5 weight % -- desirable -- Blending 0.5 to 5weight % is desirable. As a surface active agent, alkyl glycoside, polyoxyethylene alkyl ether,

Sorbitan fatty acid ester, polyoxyethylene sorbitan fatty acid ester, Polyoxyethylene fatty acid ester, oxyethylene oxypropylene block polymer (Pluronic), Nonionic surface active agents, such as fatty acid monoglyceride and amine oxide; Soap, Alkyl sulfate, alkylbenzene sulfonates, a polyoxyethylene alkyl-sulfuric-acid ester salt, Anionic surfactants, such as a sulfo succinic acid diester salt; Mono-\*\*\*\* Dialkyl amine and its polyoxyethylene addition product, mono-\*\*\*\* -- cationic surfactant [ , such as JI long chain alkyl quarternary ammonium salt, ]; -- amphoteric surface active agents, such as carbobetaine, sulfobetaine, and hydroxy sulfobetaine, are mentioned. [0013] (d) of this invention [ the high DOROTO rope agent which is a component ] The diols of the carbon numbers 1-6, such as ethylene glycol, propylene glycol, and hexylene glycol, Alkenyl (C6-C18) As for succinic acid or its alkali metal salt, and alt.\*\* , it is [ Para toluenesulfonic acid or its alkali metal salt, and alt.\*\* ] desirable especially to use one sort chosen from the group which consists of paraxylene sulfonic acid or its alkali metal salt, and urea, or two sorts or more. In this invention, addition of a high DOROTO rope agent has a big meaning. Namely, when spraying a bleaching detergent composition on the field for bleaching washing on the surface of hard, Can expect the improvement which can be steamed according [ the direction which it is more nearly foamy than the shape of a fog, and is supplied ] to mist inhalation of a user, and the improvement in operative by the increase in residence time by a vertical plane, and [ supply with such a foamy spray ] It realizes only by having combined the surface active agent and the high DOROTO rope agent with the bleaching detergent composition for the hard surfaces of this invention. High DOROTO rope agent (d) used for this invention It is usually in a constituent. It is made desirable one to 20weight % 0.5 to 30weight %.

[0014] In addition to this to the bleaching detergent composition for the hard surfaces of this invention, as occasion demands Nitrilotriacetic acid, Amino carboxylic acid, such as ethylene-diamine-tetraacetic acid, citric acid, malic acid, Dicarboxylic acid, such as hydroxy acid, such as tartaric acid, succinic acid, guru tar acid, and adipic acid, Polycarboxylic acid, such as polyacrylic acid and Polly alpha-hydroxy acrylic acid, Phosphonic acid, aminophosphonic acid, hexametaphosphoric acid, and these salts, Sodium tripolyphosphate, sodium carbonate, sodium pyrophosphate, Inorganic matter and organic builder components, such as sodium sulfate, sodium borate, sodium hydrogencarbonate, and sodium silicate, Muddiness agents, such as dispersants, such as carboxymethylcellulose, polyvinyl alcohol, and polyethylene glycol, clay, and monoalkyl glyceride, an abrasive compound, an enzyme, fluorescent dye, perfume, a pigment, a color, etc. can also be blended.

[0015] the available oxygen concentration at the time of use of the bleaching detergent composition for the hard surfaces of this invention -- general -- 0.1 to 3% -- desirable -- It is adjusted to 0.2 to 1%.

[0016] The bleaching detergent composition for the hard surfaces of this invention can be used especially conveniently for bleaching of a mold soil, and washing.

[0017] As the type of usage of the bleaching detergent composition for the hard surfaces of this invention It can also be used for one pharmaceutical form, carrying out, the peroxide which generates hydrogen peroxide, the agglomerated material of the organic peroxidation precursor, etc. are separately packaged separately in hydrogen peroxide or an aqueous solution, both can be mixed just before use, water can be added as occasion demands, and use can also be presented. And the form which sprinkles or sprays immediately the constituent mixture made into a solution or slurry on an object side is taken. The quantity of the water in a used solution is 50 to 90 weight %. As for especially the constituent of this invention, it is desirable to use as a spray type bleaching detergent composition for the hard surfaces with which the spray container was filled up. The concentration of each suitable component in this case is (a). Component; it is 2 to 15 weight % (b) preferably one to 35weight %. Component; it is 2 to 15 weight % (a)/(b) preferably one to 35weight % . = 1 / 1 - 1/0.1 (molar ratio)

(c) component; 0.1 to 10 weight % -- desirable -- 0.5 to 5 weight % (d) Component; 0.5 to 30 weight

% -- desirable -- 1 to 20 weight % (e) component; -- it is 50 to 90 weight % of water.

[0018]

[Effect of the Invention] According to this invention, there is no irritating odor, the problem which the conventional bleaching detergent composition for the hard surfaces had when putting in practical use since the bleaching detergent composition for the hard surfaces in which the bleaching power which was moreover excellent is shown was obtained can be solved, and the supply using a spray container is attained.

[0019]

[Example] Hereafter, although the example of this invention is given and explained, this invention is not limited to these examples.

[0020] (b) shown in an example 1-4 and a comparative example 1 - 10 weight % of 4 fault sodium carbonate, and Table 1 High DOROTO rope agent 5 weight % shown in a component, 2 weight % of alkyl glycosides, and Table 1 Bleaching detergent composition aqueous solution for the hard surfaces to contain (about 1.35% of available oxygen concentration) It prepared and the examination of bleaching power and foaming nature was presented. This result is shown in Table 1. In addition, it is alkyl glycoside. Formula  $R_1(OR_2) \times Gy$  ( $R_1=C_{10}$ ,  $x=0$ ,  $y=1.35$ ,  $G=$  glucose residue)

It came out and what is expressed was used.

A <bleaching power measuring method> model mold plate is placed horizontally, and it is 40microl about the bleaching agent composition aqueous solution for the hard surfaces. It was dropped, and after 30-minute neglect, after washing and being air-dry, lightness (L value) was measured using chromatometer 1001DP by NEC Industries.

model mold plate Cladosporium HERUBARUMU (Cladosporium herbarum) \*\* Plastic sheet which was inoculated and was cultivated for 30 degrees C and 14 days (product made of ABS plastics) It was considered as the model mold plate (the L value 92.4 of a plastic sheet, L value 60-70 of a model mold plate.).

- With with an evaluating point L values of 90 or more -- an OL value [ or more 80 / less than 90 ] -- less than 80 \*\*L value -- The bleaching agent composition aqueous solution for the hard surfaces was sprayed on x <foaming nature> bathroom inner wall (tile \*\*\*\*) vertical plane 3 times from the point left 30cm from the wall surface with the spray container, and visual observation of the feeling of volume of a blister was carried out by ten panelists.

- An evaluating point (number which answered that a feeling of volume was in a blister)

Eight or more persons -- O5-7 person -- \*\*0-4 person -- x [0021]

[Table 1]

[0022] The bleaching detergent composition for the hard surfaces containing 27 weight % of Para toluenesulfonic acid sodium powder and 3 weight % of sodium-lauryl-sulfate powder was obtained 35 weight % of example 5 fault sodium carbonate granular material, and succinic anhydride agglomerated material \* 35weight %. These 50g of constituents saved for one week at 40 degrees C were dissolved in water 100 g, and it sprayed on the mold generated in the wall of the bathroom using the spray container. Under the present circumstances, the blister with a feeling of volume and durability was obtained, and the mold soil was removed completely.

\* Succinic anhydride agglomerated material; as a succinic anhydride 90 weight part and a binder It corns using a polyoxyethylene (addition number of moles 20) stearyl ether 10 weight part, subsequently a particle size regulation is carried out, and it is a grain size. 0.7-1mm agglomerated material was obtained, and what coated the agglomerated material surface with the outside ratio by the hydroxypropyl methylcellulose of 2 weight parts further was used.

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[Translation done.]